



SEMINARIO

GRUPO FÍSICA DE ALTAS ENERGÍAS

"Axion-Induced Patchy Screening of the CMB"

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Abstract

Cosmic Microwave Background (CMB) photons can undergo resonant conversion into axions in the presence of magnetized plasma distributed inside nonlinear large-scale structure (LSS). This process leads to axion-induced patchy screening: secondary temperature and polarization anisotropies with a characteristic non-blackbody frequency dependence that are strongly correlated with the distribution of LSS along our past light cone. I will discuss how to compute the axion-induced patchy screening contribution to two- and three- point correlation functions that include CMB anisotropies and tracers of LSS within the halo model. I will then show that a search for this axion signal using existing data from Planck and the unWISE galaxy catalogue would be complementary to the most sensitive existing astrophysical axion searches, for a decade of axion masses around 10^{-12} eV. Observations from a future survey such as CMB-S4 could extend this reach by almost an additional order of magnitude.

MIÉRCOLES 26 de Junio de 2024
a las 14:30 hrs. (Chile Continental)

Join Zoom Meeting

<https://reuna.zoom.us/j/87161425888?pwd=MWFZUFNQQRnI4MXo1QzFLdGpJblllZz09>

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